Amendments to the Claims

1. (Currently amended) A system for providing wireless communication service to a passenger compartment of an aircraft ~~having a cockpit area~~, comprising in combination:

an external antenna located on an exterior portion of the aircraft, the external antenna operable to receive an incoming external signal from and transmit an outgoing external signal to a terrestrial base station;

a cabin antenna located in the passenger compartment of the aircraft, wherein the cabin antenna is oriented such that a transmission pattern of the cabin antenna is substantially directed away from a cockpit area of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein the cabin antenna is additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward the cockpit area, thereby further reducing interference to the flight and control system of the aircraft; and

a signal pathway linking the external antenna to the cabin antenna, wherein at least a portion of the signal pathway includes at least one low-energy transmission medium.

2. (Original) The system of Claim 1, wherein the low-energy transmission medium comprises at least one optical fiber.

3. (Original) The system of Claim 1, wherein the low-energy transmission medium is non-metallic.

4. (Currently amended) The system of Claim 2, wherein the at least one optical fiber has a first fiber end and a second fiber end, and wherein the signal pathway additionally comprises:

a repeater; and

first and second converters operable to convert RF signals to light energy and to convert light energy to RF ~~signal~~ signals, wherein the first converter is located at the first fiber end and the second converter is located at the second fiber end.

5. (Original) The system of Claim 4, wherein the repeater includes an amplifier.

6. (Original) The system of Claim 4, further comprising at least one amplifier operable to amplify a first frequency range and a second frequency range.

7. (Currently amended) A method for providing wireless communication service to a passenger compartment of an aircraft, comprising in combination:

receiving at an external antenna at least one incoming external signal from a terrestrial base station, wherein the external antenna is located on the aircraft;

converting the at least one incoming external signal into at least one incoming low-energy signal;

conveying the at least one incoming low-energy signal across a low-energy transmission medium;

converting the at least one incoming low-energy signal into at least one internal incoming signal; and

transmitting from a cabin antenna the at least one internal incoming signal into the passenger compartment, wherein the cabin antenna is oriented such that a transmission pattern of the antenna system is substantially directed away from a cockpit area of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein the cabin antenna is additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward [[a]] the cockpit area ~~of the aircraft~~ , thereby further reducing interference to the flight and control system of the aircraft.

8. (Original) The method of Claim 7, wherein the low-energy transmission medium includes at least one optical fiber, and wherein the at least one incoming low-energy signal is composed of light energy.

9. (Original) The method of Claim 7, wherein the at least one external antenna is located on an exterior portion of the aircraft.

10. (Original) The method of Claim 7, further comprising repeating the at least one incoming external signal.

11. (Original) The method of Claim 7, wherein the steps of receiving and converting the at least one incoming external signal are performed at a location outside the passenger compartment.

12. (Original) The method of Claim 7, wherein the incoming external signals and the incoming internal signals are RF signals.

13. (Original) The method of Claim 12, wherein repeating the at least one incoming external signal includes amplifying the at least one incoming external signal.

14. (Original) The method of Claim 12, wherein the steps of repeating and converting the at least one incoming external signal are performed in an electromagnetically isolated portion of the aircraft.

15. (Currently amended) A method for providing wireless communication service to a passenger compartment of an aircraft, comprising in combination:

receiving at a cabin antenna at least one outgoing internal signal from a wireless handset located in the passenger compartment, wherein the cabin antenna is oriented such that a transmission pattern of the antenna system is substantially directed away from a cockpit area of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein the cabin antenna is additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward [[a]] the cockpit area ~~in the~~

~~aircraft~~ , thereby further reducing interference to the flight and control system of the aircraft;

converting the at least one outgoing internal signal into at least one outgoing low-energy signal;

conveying the at least one outgoing low-energy signal across a low-energy transmission medium;

converting the at least one outgoing low-energy signal to at least one outgoing external signal; and

transmitting the at least one outgoing external signal to a terrestrial base station.

16. (Original) The method of Claim 15, wherein the low-energy transmission medium includes at least one optical fiber, and wherein the at least one outgoing low-energy signal is composed of light energy.

17. (Original) The method of Claim 15, wherein the at least one external antenna is located on an exterior portion of the aircraft.

18. (Original) The method of Claim 15, further comprising repeating the at least one outgoing external signal.

19. (Original) The method of Claim 15, wherein the step of converting the at least one low-energy outgoing signal and the step of transmitting the at least one outgoing external signal are performed at a location outside the passenger compartment.

20. (Original) The method of Claim 15, wherein the outgoing internal signal and the outgoing external signal are RF signals.

21. (Original) The method of Claim 18, wherein repeating the at least one outgoing external signal includes amplifying the at least one outgoing external signal.

22. (Original) The method of Claim 18, wherein the step of converting the at least one outgoing low-energy signal and the step of repeating the at least one outgoing external signal are performed in an electromagnetically isolated portion of the aircraft.

23. (Currently amended) A system for providing wireless communication service to a passenger compartment of an aircraft, comprising in combination:

an external antenna mounted on an exterior portion of the aircraft, wherein the external antenna is operable to receive an incoming external signal from and transmit an outgoing external signal to a terrestrial base station;

a repeater including at least one amplifier, wherein the repeater is operable to repeat the incoming external signal and an outgoing external signal;

a first converter operable to convert the incoming external signal to an incoming optical signal and to convert an outgoing optical signal to the outgoing external signal;

at least one cabin antenna unit having a cabin antenna and a second converter, wherein the second converter is operable to convert the incoming optical signal into an incoming internal signal, wherein the cabin antenna is operable to transmit the incoming internal signal to a wireless handset located in the passenger compartment and to receive

an outgoing internal signal from the wireless handset, and wherein the second converter is operable to convert the outgoing internal signal to the outgoing optical signal, and wherein the cabin antenna is oriented such that a transmission pattern of the cabin antenna is substantially directed away from a cockpit area of the aircraft to minimize interference with a flight and control system of the aircraft, the flight and control system being substantially located in the cockpit area, and wherein the cabin antenna is additionally configured with a high front-to-back ratio to substantially minimize back lobe energy directed toward [[a]] the cockpit area ~~in the aircraft~~ , thereby further reducing interference to the flight and control system of the aircraft; and

at least one fiber optic cable operable to convey the incoming optical signal from the first converter to the at least one cabin antenna unit and to convey the outgoing optical signal from the at least one cabin antenna unit to the first converter.

24. (Original) The system of Claim 23, wherein the incoming external signal, the incoming internal signal, the outgoing internal signal, and the outgoing external signal are RF signals.